



Georgia Institute of Technology

Office of the President

The Honorable Michael K. Powell
Chairman
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

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February 22, 2001

Dear Chairman Powell:

I am concerned about the future of the ITFS spectrum, which is under assault in the Commission's Notice of Proposed Rule Making on 3G spectrum allocations that was released January 5, 2001. ITFS is an important part of our distance learning program at the Georgia Institute of Technology (referred to herein as Georgia Tech). Moreover, preservation of the full ITFS band is absolutely critical if wireless broadband is to become a reality not only for our students but also for our entire community.

Georgia Tech was issued a license for the G-band in the ITFS spectrum by the FCC in March of 1995. We entered into an agreement with Wireless Cable of Atlanta (subsequently acquired by BellSouth Entertainment) to utilize our "excess capacity airtime" in 1995. Georgia Tech has been providing courses in several engineering disciplines to working professionals 24 hours a day, seven days a week for over two years and has plans to greatly expand its offerings using the two-way capability. Thus, this resource is a tremendous asset to the Georgia Tech distance learning program in the metropolitan Atlanta area.

If the ITFS spectrum is moved, it is highly unlikely that Georgia Tech could enter into an agreement with an outside entity for use of our excess capacity airtime. Since we would not be able to afford to install, operate, and maintain an ITFS headend and transmitting system, our distance learning program in the Atlanta area would be seriously harmed.

As you are aware, recent rule changes have opened the ITFS spectrum to the implementation of wireless two-way video and broadband data services, including high-speed Internet access. The educational power of ITFS has been expanded under the digital two-way rules to provide advanced learning services, interactive video, and wireless broadband Internet. Georgia Tech plans to use this expanded capability to deliver master's degrees online in the Atlanta area. One master's program is already available online and two others are under development.

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As distance learning becomes more robust and interactive, ITFS offers educational institutions throughout the country an affordable high-speed on-ramp to the broadband Internet for students and adult learners in the classroom, at home and at work. This goal was recently cited as the first priority for policymakers by the bipartisan Congressional Web-Based Education Commission. In addition, fixed wireless broadband promises to bring a competitor to DSL and cable modem technologies to our community, making broadband access not only more widely available but also more affordable.

In addition to the broad range of community programming currently carried on ITFS spectrum, the recent two-way order has filled a void where legislation and regulation have failed to produce affordable, ubiquitous broadband Internet access for Americans. Working in conjunction with wireless communications companies, licensees are using the ITFS spectrum to bring broadband to underserved populations in rural, urban and otherwise isolated communities nationwide. ITFS licensees are therefore helping the nation and the Commission bridge the Digital Divide as they serve the educational community.

If the Commission moves the ITFS spectrum to another band, the capacity, usefulness, and value of ITFS would be significantly diminished. Even if only part of the spectrum is reallocated, many educational institutions would lose their ITFS service altogether, while others would face new equipment costs, service disruption and cutbacks, lower quality of service, and signal interference. In either scenario, the ITFS community would be incapable of supporting advanced wireless services and promoting the development of broadband services to the educational community and to underserved communities nationwide.

If the ITFS spectrum is compromised in any way, the public benefits mentioned above will be lost. We at the Georgia Institute of Technology hope that you will support us in maintaining the integrity of our spectrum and in keeping this tremendous educational resource alive and strong.

Sincerely,

A handwritten signature in black ink, appearing to read 'G. Wayne Clough', with a long horizontal flourish extending to the right.

G. Wayne Clough
President, Georgia Institute of Technology

Xc: Commissioner Furchgott-Roth
Commissioner Ness
Commissioner Tristani



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February 21, 2001

Chairman Michael K. Powell
Federal Communications Commission
445 12th St., SW
Washington, DC 20554

Re: FCC ET Docket 00-258

February 15, 2001

Dear Chairman Powell:

I write to you concerning the future of the ITFS spectrum, with specific regards to the Commission's Notice of Proposed Rulemaking on 3G that was released January 5, 2001. ITFS is both a critical part of the development of our educational infrastructure and an essential bridge over the Digital Divide. Here in Georgia, ITFS is a vital tool for making high speed wireless broadband access a reality for our students and for our citizenry in general, especially for those in rural areas. ITFS cannot and should not be relegated to second-class status in favor of the promise of 3G wireless services.

As you are aware, recent rule changes have opened the ITFS spectrum to the possibility of wireless two-way video and broadband data services, including high speed Internet access. The educational power of ITFS has expanded to provide advanced learning services, interactive video, and wireless broadband Internet, and ITFS licensees are scrambling to deploy two-way digital services. Furthermore, as distance learning becomes more robust and interactive, ITFS offers educational institutions throughout the country an affordable high-speed on-ramp to the broadband Internet, a goal that was recently cited as the top educational technology priority for policymakers by the bipartisan *Web-Based Education* Commission co-chaired by Representative Johnny Isakson from Georgia. Equally important, fixed wireless broadband promises to bring a competitor to DSL and cable modem technologies to our community, making broadband access not only more widely available but also more affordable.

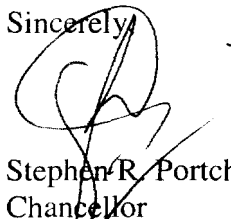
Chairman Michael K. Powell
February 21, 2001
Page Two

Georgia, the largest state east of the Mississippi, has been blessed with tremendous growth in the last decade. However, much of the growth in our educated workforce has been imported, a model that cannot be sustained. Along with the Governor and the Legislature, the Board of Regents and the thirty-four institutions that comprise the University System have embarked on a concerted campaign to create a more educated Georgia. A key component of our plans involves the effective application of educational technologies at all levels that rely heavily on access to online resources. Working in conjunction with commercial partners, use of the ITFS spectrum for broadband data services will contribute substantially to access in a mostly rural state where wired infrastructure does not exist and where its installation is too slow and costly to meet our needs.

If the Commission reallocates all or part of the ITFS spectrum for 3G mobile device services, the capacity, usefulness, and value of ITFS would be significantly diminished. Even if only part of the spectrum is taken away, many educational institutions would lose their ITFS service altogether, while others would face new equipment costs, service disruption and cutbacks, lower quality of service and signal interference. Most importantly, in either scenario, the ITFS community would almost certainly be incapable of supporting advanced wireless services and promoting the development of broadband services to the educational community and to underserved communities nationwide.

If the ITFS spectrum is compromised in any way, our educational infrastructure will be threatened and our Digital Divide widened. The University System of Georgia hopes that you will maintain the integrity of the ITFS spectrum and keep this tremendous resource available to create a more educated America.

Sincerely,



Stephen R. Portch
Chancellor
University System of Georgia

Cc: Commissioner Furchgott-Roth
Commissioner Ness
Commissioner Tristani

SINCLAIR BROADCAST GROUP

February 21, 2001

The Honorable Michael Powell
Chairman, Federal Communications Commission
The Portals
445 12th Street, S.W.
Washington, D.C. 20554

Dear Mr. Chairman:

I would like to thank the Federal Communication Commission's acting Bureau Chief of the Office of Engineering and Technology, Mr. Bruce Franca, for the very nice comments he recently made regarding Sinclair's role in the rollout of digital television. Mr. Franca was quoted as saying, "Sinclair deserves kudos for pushing development of 8-VSB a few years ahead of where it would have been, and for pointing out where 8-VSB still needs to go."¹

As you know, Sinclair has worked tirelessly to provide the best possible DTV standard that would jumpstart DTV adoption by the consumers. We first questioned documented deficiencies in 8-VSB performance over three years ago. Two years ago we were attacked by critics who claimed that 8-VSB performance was just fine the way it was. One year ago, the same critics grudgingly admitted there were deficiencies, but claimed fixes would be available in the first quarter of 2000. Now these same critics admit there are serious problems with 8-VSB performance, and that fixes are not on the horizon, but may appear over a period of time. Sadly, the most optimistic of scientific reports regarding improvements to 8-VSB state that "consumers may not see these improvements before the holiday season of 2003," assuming laboratory simulations can be implemented in the real world.² All other scientific reports are more guarded, questioning if anything other than incremental improvements are even possible.^{3 4}

Recent paper trail revelations have revealed that the just-concluded MSTV/NAB digital TV tests are not as straightforward as once claimed. Additionally, last week's *Electronic Media* reported that "MSTV reneged on a commitment to loan [OET] a COFDM receiver" due to "reliability problems" with it."⁵ These developments are indeed unfortunate as they only add more doubt to the honesty and the integrity of the tests and raise questions regarding recent important decisions

¹ Broadband Week magazine, February 5, 2001, p. 34.

² VSB/COFDM Project: Investigation of VSB Improvements, December 2000, p. 23.

³ Single Carrier (VSB) versus Multi-Carrier (COFDM) Modulation for Digital Terrestrial Broadcast Applications in the United States by University of Massachusetts Department of Electrical and Computer Engineering, January 19, 2000.

⁴ Report of the VSB Performance Ad Hoc Group to the ATSC Task Force on RF System Performance, November 30, 2000.

⁵ February 12, 2001, p. 27.

that were based on these tests. The fact that the MSTV/NAB test results ran counter to every single head-to-head test of COFDM and 8-VSB should have raised alarms bells.⁶

In contrast to the MSTV and NAB position, we would be more than pleased to work with OET engineers to help facilitate their continued tests of the DTV standard.

Sinclair has aggressively pursued a free-market, competitive approach to improving the DTV standard. We believed then – and still believe today – that this represents the most responsible approach to improving DTV. As silly as it sounds, one major trade association has argued that competition is a disincentive to improve a product. Frankly, we thought that worn-out mindset died when the Iron Curtain fell. We believe it is imprudent for the broadcast industry – and by extension, the American public – to place exclusive reliance on an inadequate technology to deliver DTV service to every home in America, when a proven technology is doing just that abroad.

Only one organization has maintained a position that has remained unchanged for the last few years. Sinclair has not changed its position one iota. We believe broadcasters should be permitted to choose between two competing standards. A review of the modulation controversy has shown that everyone from the electronics manufacturers to NAB to MSTV to the ATSC have changed their positions and/or arguments on several occasions. Even the FCC made numerous inaccurate statements in a technical report⁷ that were disproved both before and after the report was issued.

We are steadfast in our efforts not because it is fashionable or convenient. In fact, the opposite is true. We are committed to our efforts because it is the right thing to do. Ours is a singular business. We provide free, over-the-air television to one of four homes in America. We do not own cable systems, cable channels, newspaper businesses, have huge radio portfolios or have sweetheart deals with satellite companies that compete with our free, over-the-air business. That, perhaps more than anything else, is what separates us from some of Washington's more influential media conglomerates.

We are now being asked, "Why don't you just give up?" Perhaps the best analogy is to ask: Where would the U.S. be if we tired and gave up on our containment policy of Saddam Hussein or if we had grown weary of supporting anti-apartheid policies in South Africa? We find surrendering the proper position unthinkable. In the case of DTV, we only fool ourselves if we continue to ignore the scientific realities.

We recognize that yours is a difficult job. On one hand, a group of broadcasters express alarm that the U.S. is moving forward (albeit very slowly) with exclusive reliance on a system that has yet to meet broadcaster requirements. On the other hand, a group of powerful Washington insiders attempt to obfuscate the facts in order to advance a risky strategy of browbeating the Commission and Congress into granting immediate must carry status for digital television. Divining who is right and who is wrong is not an easy task.

⁶ Head-to-head tests showed COFDM superior to 8-VSB in Brazil, Hong Kong, India and Singapore. New tests and/or reviews of 8-VSB performance have been requested in Argentina, Canada, South Korea and Taiwan.

⁷ OET Report FCC/OET 99-2.

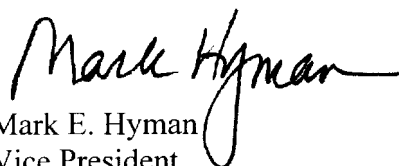
Most independent observers agree that had the Commission adopted our 1999 proposal to add a second standard to the U.S. DTV mix, that the rollout would be well underway with consumers buying receivers that actually worked and broadcasters would be using whichever standard best served their markets. As you may know, DTV chips that can demodulate both 8-VSB and COFDM already exist. A dual standard capability would be completely transparent to the consumer.

Finally, I would like to draw your attention to the article that appeared in the New York Times last week, which I have enclosed. An observer who read the article sent an e-mail to me that stated, "It looks as if the journalist had cribbed from the Sinclair petition!" The article restates everything we have been saying. Unless we get DTV right, it won't be adopted.

In closing, we urge the Commission to continue to pay close attention to this issue. We believe it is not overly melodramatic to state that the future of free, over-the-air television relies on it.

As always, feel free to contact me on these or any other issues of interest to you. My direct line is (410) 568-1565.

Warmest personal regards,

A handwritten signature in black ink that reads "Mark Hyman". The signature is fluid and cursive, with a long horizontal stroke at the end.

Mark E. Hyman
Vice President
Corporate Relations

Enclosure

ESSAY

High-Definition TV: All or Nothing at All

By ERIC A. TAUB

I LOVE high-definition television. I have been enamored of the technology, now the highest quality of digital television, since I saw an early version demonstrated by CBS in 1982. Even in its earliest incarnations, the difference in image quality between it and regular TV was startling. I figured we would all have HDTV by the end of the 1980's.

As much as I am taken by HDTV, the Super Bowl bores me. But when I learned that CBS was going to broadcast this year's game in HDTV, I decided that it was something I had to see. Almost 18 years after I first saw HDTV, I wanted to be one of the 60,000 people able to show their friends football's biggest event in all its wide-screen, supersharp glory. The prospect was as exciting as when I first saw Howdy Doody on our new TV in Queens in 1951.

HDTV has not exactly taken the country by storm. Although it has been available for more than two years and the federal government has mandated a switch to digital broadcasting, perhaps as soon as 2006, only about 700,000 sets have been sold that could allow viewers to receive HDTV broadcasts with the purchase of additional equipment. The electronics industry and the government are trying to figure out how to get more people to buy HDTV and digital television sets.

If HDTV makers wanted to improve sales, here is a radical solution: make HDTV as easy to receive as today's analog television, and give people something to watch.

Today, if you want to see HDTV, or any digital broadcast television, it's back to the future. Get out your ladder and say hello to your roof or attic. Despite the fact that 70 percent of the nation gets its television via cable, except for one or two markets, you can't get HDTV that way. The only way to watch the HDTV and digital TV feeds from local stations and the networks is with an antenna — an ugly indoor one if you are close enough to the transmitter, or an outdoor one if you are not.

Most people expect to buy a TV, take it home, plug it in and start watching — plug and play, to borrow a computer phrase. But trying to get an HDTV image is more like plug and unplug and then reconfigure and plug in again — and then pray. If you are the kind of person who would have loved owning a car in 1910, believing that the new worlds a vehicle would open outweighed the need to change a tire every 10 miles or crank the engine by hand, then HDTV is for you.

I am that kind of person. After waiting 18

years, and forcing my wife to listen to my reports on the latest HDTV news for the past decade, I decided to buy an HD-ready set. By November, prices had declined from the outrageous \$10,000 entry point two years ago to \$2,500. After I took a few deep breaths, the price of a Philips wide-screen model even started to seem palatable.

To keep down the price, most digital TV's require an additional set-top decoder box that costs from \$550 to \$1,000. Fortunately, I was able to borrow an RCA decoder that arrived with six different cables and a 92-page manual. In an hour, I got everything connected.

I climbed into my attic, disconnected my cable TV service and reconnected the wire from the television to a small indoor antenna that other HDTV viewers had raved about. The antenna manufacturer told me that even though I lived 60 miles from the transmitter in Los Angeles, I would probably get a picture if I put it in the attic. I

**Let's go up the ladder
to the roof — to see
Super Bowl XXXV much
better.**

turned on the television and the HDTV decoder box and saw... nothing.

According to information I found at the Web site of the Consumer Electronics Association, what I really needed was an outdoor "fringe" antenna with a signal amplifier. Enter your address on the site's form and a map appears indicating the type you need and where you should point the antenna. The Web site even takes your terrain into account, so the results are reliable, an association spokeswoman, Amy Hill, told me.

I donned some hiking boots and climbed a ladder to my sloping roof, one hand holding the new outdoor fringe antenna, the other tightly grasping the roof overhang for dear life. I soon learned two things: I badly needed a new roof, and the Web site's directions for aiming the antenna were not that accurate. I turned on the television and saw nothing but a few analog UHF channels with ghosting so bad I thought I was back in Queens watching Howdy Doody being pulled into my living room over the rabbit ears antenna on my parents' old Emerson.

When I checked the digital channels' signal strength on the RCA box's meter, a few stations registered a low number, but most did not even show up.

I deputized my wife. I would climb onto

the roof, rotate the antenna and call her with my cell phone while she checked the on-screen signal meter for signs of improvement. Hugging the chimney for support, I rotated the antenna about 20 degrees. Finally, pictures began to appear.

KCET, my local public television station, was running a high-definition sampler on Channel 58, its digital channel, and the image quality was extraordinary, but the picture was squished and off center. An adjustment had to be made to the "retrace timing" option on the RCA box, an undocumented fact I discovered by exploring the box's on-screen menus.

Once all the adjustments were made, I was presented with a lifelike quality to the programming that was a qualitative leap forward in my video experience.

I was very excited.

Then the images started to break up.

That's the thing about digital television: you get either a perfect picture or, if the signal is too weak, none at all. Live far enough from the transmitter and, because of changes in the weather, you may get a picture at one time of the day and not another. If the signal is too weak, you won't

get ghosts, but the images will start to pixilate; suddenly your perfect picture looks like a choppy QuickTime movie viewed over a slow Internet connection, and then it disappears.

At least the CBS digital station was coming in solidly, a sharp, continuous image, the best I'd ever seen on a TV. I started planning my first Super Bowl party in earnest.

But I wasn't satisfied. I was receiving only about half of Los Angeles's digital stations. I borrowed still another antenna, a larger Channel Master deep-fringe model, hoping my wife wouldn't notice that our roof was starting to look like a C.I.A. listening post. With it, I picked up three more digital stations.

At 8 a.m. on Super Bowl Sunday, I turned on my digital television and the converter box in a compulsive attempt to assure myself that everything was working properly. The strength of the CBS signal, which had been registering in the 50's, had mysteriously dropped into the low 40's, and the picture was periodically breaking up. I wondered if the antenna had moved. I fantasized that in a few hours, I would be shuffling 10 guests into the bedroom to watch the game on our

old 19-inch Toshiba.

Within two hours, however, the signal strength had jumped back into the 50's just as mysteriously as it had dropped. The picture stabilized, but at 3 o'clock, the pregame show over, the screen suddenly went black. When the picture reappeared 20 seconds later, it had opened up to fill the wide screen, with crisp sound and extraordinary clarity.

"This picture looks three-dimensional," a friend said. "I've never seen anything like this. You can see faces in the crowd and blades of grass."

Uniforms took on a marked sheen. The picture looks like you're actually there, my wife said.

I still don't care about the Super Bowl. But I was mesmerized by the Super Bowl in HDTV.

Is it worth it?

"Now I see what you've been talking about for so long," said one of our Super Bowl guests to her football-mad husband during the game.

"O.K.," she added, "let's get an HDTV."

The question is, will HDTV be able to get to them, and to everyone else who wants it?



Bob Scott